

### SQL Server Essential Administration

Duration: 3 Days

## OBJECTIVES

This course is aimed at anyone charged with administering a SQL Server database system. It focuses on only the core administration responsibilities enabling new SQL Server database administrators to build the skills necessary to install, configure and support a simple SQL Server deployment. The objective is to provide the essential skills for managing a single instance system, enabling administrators to get up and running to a basic level fairly quickly, but also to provide an awareness of some of the more advanced services available. This course can be followed by a number of additional courses focussing on different specialisations and services available for SQL Server deployments. This course, along with the SQL Server Advanced Administration Course, helps to prepare delegates for the Microsoft 70-462 exam: Administering Microsoft SQL Server 2012/2014 Databases. This exam credits towards MCSA and MCSE certifications. It should be noted, however, that all course attendances should be complemented by reference to the skills measured by the exam, a period of self-study and test exams before sitting the actual exam. This course is suitable for delegates working with all versions of SQL Server from SQL Server 2008 through to SQL Server 2016.

## PRE-REQUISITES

Delegates attending this course should have as a minimum a basic understanding of relational databases and the SQL language, up to the level provided by the course 'SQL Server Database Querying Course' and would benefit from having attended the 'Transact SQL Programming Course' as well.

## COURSE OUTLINE

### SQL Server Architecture

#### New Features in 2012 and 2014

- Data Files & Transaction Log Files
- SQL Server Native Client
- System Databases
- Schemas
- Synonyms
- Dynamic Management Objects
- Editions of SQL Server

#### Installing SQL Server

- Planning to Install SQL Server
- Installing SQL Server
- Configuring a SQL Server Installation
- Uninstalling SQL Server
- Troubleshooting a Failed Install

#### Upgrading SQL Server Best Practices

- Why Upgrade?
- Upgrading In Place and Side By Side

- Pre-upgrade Steps & Tools
- Backward Compatibility
- SQL Server Components
- Post Upgrade Checks

## Managing & Troubleshooting SQL Server Database Engine

- Configuration & Administration Tools
- Troubleshooting Tools
- SQL Server Management Studio (SSMS)
- Configuration Manager
- sp\_configure
- Monitoring Processes In TSQL - sp\_who, sp\_who2, sys.dm\_exec\_connections, sys.dm\_exec\_sql\_text
- Multiserver Management
- Trace Flags
- Getting Help

## Automating SQL Server

- Maintenance Plans
- Automating SQL Server with SQL Server Agent - jobs, schedules, operators, alerts
- SQL Server Agent Security
- Configuring SQL Server Agent
- Multiserver Administration

## Securing The Database Instance

- Authentication Types
- Logins and Users - Principals and Securables
- Authorising Securables - Server Securables, Database Securables, Permission Chains, Cross-Database permission Chains
- Row Level Security

## An Introduction To Performance Optimisation

- What Developers Need To Know About Performance
- What DBAs Need to Know About Performance
- Optimising SQL Server - Indexing, Compression, Resource Allocation, Resource Governor

## An Introduction Monitoring SQL Server

- Viewing Current Activity
- Performance Monitor
- SQL Server Profiler
- Extended Events
- Dynamic management Views
- Monitoring Logs
- System Centre Advisor (SCA)

## Backup and Recovery

- Backup and Recovery Enhancements
- Overview of Backup and Restore
- Preparing For Recovery
- Developing and Executing a Backup Plan
- Managing Backup
- Backup and Restore Performance
- Performing Recovery
- Archiving Data

## An Overview of Other Services

- An Overview of Replication Service
- An Overview of High Availability Services - Clustering, Log Shipping, Database Mirroring, Always On Availability Groups
- An Overview of Integration Services (SSIS), Reporting Services (SSRS), Analysis Services (SSAS)
- An Overview of Service Broker
- An Overview of Common Language Runtime (CLR)
- In Memory OLTP